

MORTON (W. J.) *al*

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Cases of Sciatic and Brachial Neu-
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and Cure by Electro-Static Cur-
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BY
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NEW YORK

Cases compiled from records by W. B. SNOW, M.D.

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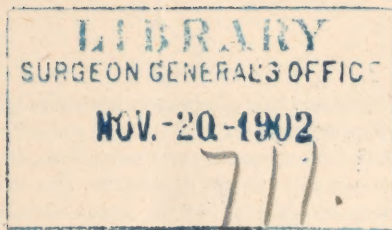
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CASES OF SCIATIC AND BRACHIAL NEURITIS AND NEURALGIA—TREATMENT AND CURE BY ELECTRO-STATIC CURRENTS.

BY WILLIAM J. MORTON, M.D.,

NEW YORK.

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IN 1893 I published in the *Post-Graduate* some cases and views relating to the treatment of neuralgia and neuritis by means of static electricity. Since that time, almost without exception, I have continued to treat neuritis (as well as the various types of neuralgia) in no other manner, and since then I have also greatly enhanced the efficacy of the treatment by improvements in the method of electrostatic application, referred to later on. I believe that a great advance in the treatment of these diseases is made by employing the electrostatic currents, and for this reason I now present a brief report of individual cases and a general summary of eighty cases that have been treated in this manner. The cases here referred to I believe to be distinctively neuritis. Cases of neuralgia in the sense of a functional sensory neurosis have been excluded, as well as cases of neuritis other than of the sciatic and brachial regions, since the number would be unwieldy, or the deductions drawn less conspicuous.

Many cases of pain in one arm or one leg, with no local tender spots on pressure, present themselves, which are, no doubt, as Oppenheim has pointed out from an analysis of one hundred and eighty-nine cases, a neurosis and are associated with neurasthenia or hypochondriasis. These cases have been excluded, although more numerous than those distinctively of neuritis. Such cases yield promptly to electrostatic currents directed to the cure of the constitutional con-

dition. It is true, the diagnosis between a neuralgia and a neuritis, especially one of a chronic type, is not always and in all cases an easy one; but, on the other hand, many cases leave no doubt in the mind as to their neuritic character; while again it is certainly true that many so-called neuralgias are, in fact, cases of neuritis. At all events, it is here no question of entering into a pathological discussion, but merely a question of a clinical symptom picture, and of a specific cure of the disease, whether it be called a neuritis or a neuralgia.

Eighty cases are here presented, either in detail or by synopsis and tabulation. This number includes cases of neuritis treated both in private practice and at my clinic at the Post-Graduate Medical School and Hospital during a given period. They are not selected cases, but include nearly all of the cases of brachial and sciatic neuritis treated. The cases indicated as "relieved, but ultimate history not available," were all in dispensary patients, whose records show that they recovered up to a point that enabled them again to go to work; had they not been cured they would probably have returned.

And here a word in general as to the method of treatment. In no case was any medicine employed. Electricity was the therapeutic agency. But many doubt if electricity will accomplish a cure. And Gowers,¹ while admitting some value in electricity for chronic forms, says it "has little influence during the acute stage."

In regard to the first objection, I would observe that success depends upon what one means by "electricity." It is a common remark of a patient, "Oh, I have taken electricity, and it did me no good." This remark is undoubtedly true; for it is also equally true that the real and beneficent action of electricity as a therapeutic agency has been almost stultified by the ignoramus and the charlatan. The former, indeed, does the most harm, for without adequate knowledge he trifles with the subject. When he should be an oiler in the

¹ "Diseases of the Nervous System," vol. i., p. 71.

dynamo-room he essays to run the machinery and utilize its product. Hence the patient's remark.

As to galvanism and faradism in these cases, I prefer electrostatic currents, and this not alone in neuralgia and neuritis, but also in a large sum total of diseases which may be properly treated by electricity. I must here say that the often-repeated remark, that "the static current does not penetrate the human system," is unworthy of serious attention. Electrostatic currents penetrate more deeply, more thoroughly, and more universally than does any other form of current. To maintain the contrary is to ignore electrical physics and the demonstrable proofs of physiological experiment. It is, for instance, demonstrable that each and every striped muscle of a living human being may be caused to contract by a "static current." How may this be if "the static current does not penetrate the human body"? These muscles are beneath the surface, and some of them are quite in the centre of the human being. Or, if one grasp the handle of an electrode conveying an electrostatic current of the type here referred to, one cannot let go the grasp.

I have long employed the spark "applied to the sore spots" as the best general treatment, but of late the specific electrical method which I prefer is one of currents derivable from a powerful influence machine, sometimes called a static machine. And this refers not to sparks, but to a new order of currents fully described previously and again recently in a communication to the Société Française d'Électrothérapie of Paris.¹ The patient is not included in any circuit, but is connected with prime conductor of the machine and subjected, in a manner absolutely painless to himself, to powerful electric surgings.

In regard to the second objection, I would remark that the treatment I here advocate is applied to the most acute cases, and with immediate relief from pain.

¹ "Courants dérivés des appareils Électro-Statiques," Bulletin Officiel de la Société Française d'Électrothérapie, Janvier et Février, 1899.

See also The New York Electrical Engineer, March 2, 1899.

The invariable report in such cases is that the patient that very night slept without the usual doses of narcotics, whiskey, etc., and from that moment progressed to a cure. In fact, the more acute the case the more urgent the electric treatment, and the more immediate the relief and cure.

The "rest cure" by splints or by lying in bed, so warmly advocated for these cases, is, if electrostatic currents are employed, absolutely unessential. I have seen several cases (among them Case VI.) in which the rest cure (enforced immobility by splints, etc.) has been followed by extensive adhesions which have crippled the joint for life. I instruct patients to avoid undue volitional movements of the affected member or members, but in no case do I render the limb immobile by splints, plaster bandage, or even an arm sling. Touching the question of adhesions, Dr. J. Crawford Renton has recently pointed out, in an article in the *British Medical Journal* (November 5, 1898), their comparative frequency, the result, probably, of a perineuritis, and has given eight illustrative cases of sciatic pain in which the removal of wide adhesions by surgical operation produced complete recovery.

In regard to the usually accepted prognosis, in the cases here treated of, Dr. Gowers' remark may be accepted as expressing the average opinion, namely: "Except in its most trifling degree, brachial neuritis is a tedious malady; the duration of every severe case is to be measured by months, and often more than a year elapses before the patient is free from pain." The remark applies equally, of course, to sciatic neuritis.

CASE I.—December 6, 1898. Lieut. J. C. F——. This case is reported as an average example of the ordinary form of brachial neuritis and its treatment by electrostatic currents. During the recent Spanish war he was much exposed to cold on a torpedo-boat, the *Porter*. Ten years ago this patient had been under my treatment for a very severe attack of sciatic neuritis. He is neither gouty nor rheumatic. The present attack of brachial neuritis came on at 3:30 A.M. in the

night of November 24, 1898. He waked up, thinking he had a cramp in the region of the right scapula. A dull aching pain quickly developed throughout the shoulder and down the arm. Soon the arm "felt asleep" and also the thumb and index finger. The rest of the night he suffered intense pain, and from that date to the present one this suffering has continued. The pain is like that of a severe toothache. It is most intense at night, especially from 3:30 A.M. until after daylight, but the pain also continues all day. He has been unable to get into any position where the arm does not ache. The spot of most intense pain—a spot which aches acutely whenever he arises from the recumbent position—is just below the humeral insertion of the deltoid muscle. For relief he has been taking powders of sulphonal every three hours night and day and morphine at night, and is now largely under the narcotic influence of both drugs. As the patient entered the office his facial appearance expressed great suffering; he held the right arm rigidly fixed and extended downward in a straight line, carefully protecting it against jarring movements by grasping the right hand with the left. There were five spots very painful to the slightest pressure, two in the scapular region, one in front of the shoulder, one at the insertion of the deltoid, and one at the ulnar notch. Also pressure upon the main nerve trunks of the arm causes much pain. Since the onset of the attack (twelve days) he has been able neither to rest nor to sleep except in one special attitude, namely, flat upon his back with the arm extended alongside of his body.

Treatment: Although the patient was suffering most acutely, the electrostatic treatment was immediately applied during fifteen minutes to all of the sensitive points of the shoulder and arm and to all the nerve trunks. Upon the cessation of the treatment, the patient, to his surprise, found he had free movement of the arm in all directions, and swung it about, even above his head, to demonstrate this fact. He said, furthermore, that he had no more pain.

December 7, 1898.—To-day he reports that the pain

stayed away until the afternoon, when it came back, but was very bearable, and for the first time he could spend the afternoon up, walking about. Usually he had lain flat on his back all the afternoon. The modification of pain the patient describes by saying that the arm felt yesterday like an arm sore after throwing a baseball. A mere slight ache only was present. He went to bed, was perfectly comfortable, and went to sleep. He waked up as usual at 3:30 (the same time as the attack began) and had to get up and use heat, but he was up only ten minutes, and went to bed and slept the rest of the night. The numbness of the index finger has disappeared, and he can now feel things with the finger. This morning the arm ached again, but he can use it freely and put on his clothes.

December 8th. The report is good—no pain at all, the arm felt merely heavy. This morning there was a slight return of throbbing and aching for about one hour.

December 9th. There was some dull ache last night, due to three hours' chill at a launching; but the pain was not sharp, as before, in character. After treatment he had no pain, and there was free movement of the arm.

December 10th. He had one half-hour's dull ache; he slept four hours steadily.

December 12th. At 3:30 he had pain for a little while, and to-day the arm was perfectly comfortable.

On December 15th, 16th, 17th, and 20th the treatment was repeated; the arm and shoulder were constantly improving, and the patient was suffering scarcely any pain at all.

The patient's last treatment was on January 6th, just four weeks from the time of beginning, and, in response to an inquiry of January 20th, he writes: "I am all right again, and have been busy attending to my proper business and trying to catch up with back work. I am entirely clear of the trouble; in fact, if I had not had it, I would not know what the slight occasional pain in the shoulder-blade and the numb end of my finger mean."

CASE II.—May 8th. William M. R.—, aged forty-five years, physician. Owing to anxiety, the patient lost twenty-seven pounds last month. He never was subject to rheumatism. He has not been sick for twenty-five years. This attack was due to grippe about one month ago. During a snowstorm he swept off the sidewalk, got very warm, and felt a “crick” in his back. This was on April 3d. The next morning he noticed a severe pain across the back, of a lancinating, shooting, dull, exacerbating character, extending throughout the hip, the knee, and calf. Soon he had cramps in the gastrocnemius and in the flexor group of the thigh. The worst pain was upon rotating the leg. The leg felt cold, he had extreme itching, drawing, and various subjective sensations in it. The leg was so cold that, even when it was covered with blankets, he frequently asked if it had not become uncovered. The tendon reflex was abolished. There were extremely sensitive spots at the trochanteric notch, beneath the knee, over the branches of the peroneal nerve, even to the ankle, and over the superficial regions of the posterior tibial nerve, as well as the anterior tibial and the musculo-cutaneous. Symptoms of locomotor ataxia were excluded. The patient is taking half a grain of morphine daily and large doses of whiskey. He walks lame, with great caution, and suffers most at night.

Treatment: Electrostatic, twenty minutes. The patient had already experienced a great variety of severe treatments for his sciatica before coming to me, including medicines, capsicum, and mustard, and a fly-blisters, five inches square, over the sciatic notch.

May 9th. He reports that he did not have more than two cramps in place of twenty-five to thirty on the previous night; that he reduced the amount of morphine one-half; that he slept nearly all night; that he walks better; the numbness on the outer side of his thigh is gone; that he can turn in bed better; that he suffered no pain at all to-day, and is exceedingly grateful for the relief.

May 10th. He had no cramps at all, nor tenderness

or soreness, except from the knee to the ankle, nor pain in walking except on severe jar. He perspires very freely about half an hour after each treatment; he says the sweat trickles off him for several hours. After treatment he walks better; the legs are less stiff, with no tenderness or pain.

May 11th. Great improvement.

May 12. Yesterday he slept with the window open; waked up with pain and throbbing in the ischiatic notch, extending down the leg. The entire skin of the leg was extraordinarily hyperæsthetic.

May 13th. He walked six blocks to his office.

Three treatments only followed, until May 24th, when, owing to having slept that night with the sciatic leg underneath, he had a slight relapse. It was noticed, at this time, that a treatment at the sciatic notch set up a thrilling sensation in the nerve, which could be felt even to the toes.

May 28th and 30th. The treatment was continued; still some general pain and suffering.

June 1st, 3d, and 4th. Treatment continued.

June 13th. Steady improvement. Last night, for the first time, he was entirely free from itching.

July 5th, 6th, and 7th. The patient received his last treatment, and reported that he considered himself entirely well, with the possible exception of a slight dull sore feeling about the middle of the tibia.

CASE III.—Mrs. W. J. E——, aged forty-nine years. The left arm and shoulder are numb, heavy, tired, and ache nearly all the time, but are worse in the evening. The hand feels “as if going to sleep”; the ring and little fingers are sore and have a dull ache; she rubs them often for relief; the aching comes on every night during sleep, and she often wakes up, feeling that the arm is “perfectly dead.” This condition has existed for a year. There are painful spots on the deltoid humeral insertion and in front of the shoulder. She has frequently a pronation twitching movement of the forearm.

Ten treatments were given, extending over a period

of four weeks; the patient reports the arm as perfectly well.

CASE IV.—B. P. D——, aged fifty-five years. One week ago pain began in the left arm and shoulder; couldn't sleep at night, except for cat-naps of two or three hours; no position afforded relief; the shoulder was more comfortable when he was standing up at night than when lying down. For seventy-two hours there was one continuous ache; the movement of the arm was restricted, so that he could not raise it, couldn't shave himself, and couldn't even get his thumb up to his cheek.

Seven treatments were given, extending over a period of eleven days. The patient reports that he is well.

CASE V.—Mrs. B——, aged sixty years. She has been subject all her life, more or less, to attacks of sciatic pain in both legs. For several months she has had settled, gnawing, dull, aching pain in the right leg and hip, which wakes her up about two o'clock and lasts until the morning. She takes all sorts of remedies. She has a "Morton toe," and is subject also to intercostal and axillary neural pains.

The patient had sixteen treatments, extending over a period of four weeks. She reports that she sleeps through the entire night without pain; that she is taking no medicine for relief; that she feels lighter and more active in her legs—in short, that, having "suffered all summer the torments of the lower regions," she now feels perfectly free from pain.

CASE VI.—E. S. N——, merchant, aged sixty-two years, came to the office on November 9th with the following history: Five months ago he was attacked with a dull, aching pain in left shoulder, at about the tip of the acromion process, with general pain in the joint on movement. The treatment to date had been rest, applied heat and cauterization, without improvement of his condition.

Present condition: (1) Suffers pain about shoulder and upper arm. Will go to sleep at night, but is awakened by the severe pain. (2) Motion is restricted by adhesions. He cannot put his hand behind his

back, nor to the top of his head, nor raise his arm to a right angle with the body. All movements cause severe pain. (3) There is decided wasting of the deltoid muscle. (4) There are marked crepitus on rotation and spasmodic contraction of all muscles about the shoulder.

Treatment: Long sparks and friction.

November 10th. The pain was relieved by the treatment and has not returned. The arm is still painful on motion.

November 12th. The patient is much relieved. He put on his overcoat without pain for the first time this season. Takes treatment now every second day.

November 21st. Improvement is progressive. He is able to put his hand on the top of his head.

December 2d. He has had no pain whatever for more than a week. There are adhesions, probably tendinous, which are the result of the rest treatment during the active inflammatory condition.

December 12th. The patient took treatment to date, without return of pain, and was entirely cured, except for the adhesions which still exist.

CASE VII.—January 18th. Mrs. M. K——, aged forty-five years. Her family history is good; previous history good; she has had no rheumatism. Her present illness began last spring with a sudden attack of severe pain in the right axilla, which soon involved the whole shoulder, arm, and scapular region. The pain was so severe for two months that she could not sleep at night. From the beginning to this day her arm and hand have been swollen, painful on motion, and absolutely useless. She can now raise the arm only to a straight line with the shoulder, and that with a painful effort. The hand is somewhat flexed and useless; she can straighten only the forefinger, nor can she close the hand with the utmost effort. The hand and arm are swollen, cold to touch, mottled in appearance, and sensitive to pressure, most markedly over the large nerve trunks; at times the hand feels numb and has tingling to the end of the fingers.

Treatment: Long sparks and rubbing. The first

treatment gave great relief. The patient was able to move the arm freely without pain.

January 20th. The patient has been very comfortable since the treatment and is able to use the arm a little.

January 23d. The patient is greatly encouraged. She was able this morning to pin her skirt for the first time since she was attacked. She suffers little pain now on motion, the swelling is less marked, and the surface begins to look natural. Substituted surging currents to-day for sparks. The relief obtained from the treatment was very marked. She said she felt absolutely no pain on moving the arm, but the arm feels weak and heavy.

This is a typical case of neuritis, which received the attention of two able physicians for upward of eight months, who prescribed rest, diet, and internal treatment, without success, while three electrostatic treatments gave great relief, and established a process of reconstruction which enables her to use her arm nearly if not quite as well as ever.

CASE VIII.—E. W——, nurse, right sciatica of five months' duration. Sensitive points: middle of thigh, popliteal space, calf of leg, behind external malleolus. Pain constant; difficulty in getting up and down; knee jerk exaggerated; impaired nutrition; the patient is thin and worn-looking. April 27th to May 13th, seven treatments; improved nutrition; gain in weight; pain gone; free movement.

CASE IX.—McW——, clerk, double sciatica of four years' duration. Onset sudden, worse in right leg; there is constant pain, worse before storms and in rainy weather. December 21st to February 5th, seven treatments were given. Recovered; able to stand at work all day. November 23d, he presented himself for another trouble; no return of the sciatica.

CASE X.—D. D——, painter, right sciatica of six weeks' standing. Painful points: sciatic notch, middle of thigh, and below head of fibula; the leg is held stiffly in walking and slightly flexed; extreme pain, worse on movement; he was taking opium. Twenty-one treatments; discharged recovered.

CASE XI.—A. H——, clerk, double sciatica of nine months' duration. Left at first, then right. Pain: sacrum, sciatic notch, popliteal space, and to foot; he cannot sleep; knee jerk is scarcely evocable in left leg. December 14th to March 2d, thirteen treatments. The pain was markedly relieved after five treatments; after six, he was able to sleep until 5 A.M. and to go to work. After nine, he was at work all day, standing from morning until night. Recovered.

CASE XII.—B. M——, driver of ice-wagon, right sciatica of nine months' duration; he has great pain, could not sleep; impaired nutrition; worn and anxious countenance; impaired mobility; he walked with great difficulty. October 9th to December 14th, twenty-eight treatments were given; he now has no pain; walks well; improved nutrition; gain in weight; he is able to go to work.

CASE XIII.—S. B——, right sciatica of six months' standing. Pain: sore on pressure at popliteal space; he has difficult locomotion and impaired mobility; walks with cane only. August 31st to November 6th, sixteen treatments. He now walks without a cane; he has no pain or soreness.

CASE XIV.—Mrs. S. S—— has had double chronic sciatica four and a half years. The onset was sudden, involving the back and left leg, then right leg; she has been in hospitals and taking medicine and galvanism off and on ever since. Pain: cramps. She has shortening; walks only with cane; she could not get on or off the insulated platform without help. October 28th to December 30th (fourteen months), seventy-eight treatments. She now gets on and off the platform without help; walks everywhere indoors without a cane; there are no pain and no cramps.

CASE XV.—February 7th. M. G——, aged fifty-two years. Seven months ago he had a chill, followed by severe pain in the region of the right shoulder, not in joint. Later on the pain became dull in character. He cannot raise his arm to the level of the shoulder. The arm is weak, and there is developed a characteristic neuritis. Treatment three times per week.

February 9th. He can raise his arm slightly from the body.

February 11th. There is very little pain; the movement is about as last time.

February 18th. He can touch his hand to his face for the first time since he was first attacked.

March 9th. Steady improvement; he can now put his hand on top of his head.

CASE XVI.—October 20th. L. F——, aged 62 years, hod-carrier. He has suffered for eight months with pains in both shoulders and left hand.

Treatment: Long sparks to affected parts and general treatment.

October 26th. He is feeling better.

October 28th. He has slight pain all the time in the arm. He is stronger, but still cannot lift much.

November 13th. He has severe pain over the left shoulder blade.

November 20th. The arm is growing daily stronger and the pain is diminishing.

November 30th. He has had great pain in the left arm during the last four days.

December 4th. He has severe pain in the shoulder and arm.

January 4th. He is always better the day of treatment for a few hours only.

This patient disappeared, and the result of treatment is not known.

CASE XVII.—January 4th. A. W——, housewife, aged thirty-four years. The attack began five years ago, but has been worse during the last two months. She has dull pain in both arms, worse at night; all the fingers and thumbs on both hands become numb and tingle.

Treatment: Rubbing; sparks.

January 8th. The patient is very much better; less numbness in arms.

January 11th. She continues to improve.

February 12th. She is very much improved, and did not return for treatment.

CASE XVIII.—December 21st. P. Q——, carpenter, aged fifty-six years. Five years ago he noticed that

he could not hold a hammer well; this was always worse in cold weather. He had no swelling or pain at first, but was growing steadily weaker. He has pain now in the right arm and in the shoulder, with numbness and tingling. At times he cannot raise the arm. There is also marked atrophy of the muscles of the hand.

Treatment: Rubbing sparks, long sparks, and general treatment.

December 29th. The arm is stronger and does not numb so easily; there is also less tingling.

February 1st. About the same.

February 26th. The right arm is stronger, with less pain. The treatment relieves for four or five days.

CASE XIX.—February 10th. M. N. M——, nurse, aged forty-four years. One year ago she had a sudden attack of pain in the shoulders and legs. Her limbs were stiff, and later her hands were numb. When she wakes in the morning, the hands are numb; she has also tingling and prickling through the arms and fingers. She has the same in her limbs, but not so marked.

Treatment: Rubbing sparks to arms and legs and general treatment by sparks.

February 12th. Noted improvement.

February 24th. The arms are very much improved and feel stronger, also less pain in shoulders. Cured.

CASE XX.—December 18th. J. B——, boatman, aged forty-eight years. Four months ago he first noticed pain in the region of the left knee. He has pain now from thigh to knee; the left side is numb, goes to sleep, feels cold and heavy; he seems to drag it around with him.

Treatment: Long sparks.

December 20th. Since treatment the leg is stronger, feels less numb, and he can walk better.

January 13, 1897. He has been to sea and unable to take treatment. The leg is atrophied and weak. It began to get worse two months ago.

January 22d. The leg is stronger.

February 15th. General improvement continues.

February 24th. Improvement very marked.

April 19th. The leg is much stronger. He can stand on it all day.

CASE XXI.—March 25th. J. H——, aged forty-eight years. He began seven months ago to have a severe pain in the urethra and perineum, lasting a few minutes, and followed by a loss of power of the right side for twenty seconds, after which his foot felt as if asleep. Since then he has had pains, sharp and severe, all over. The pain in the shoulder is severe ever since the attack. He has lost strength. His hands feel as if asleep and stiff. He has at times tried to work, and afterward could not touch the flesh on account of the pain it caused.

Treatment: Sparks.

April 8th. There was no change in condition.

April 20th. He feels stronger and can use his arms better, and the numbness in the feet is less marked.

April 27th. The right side is about normal, and the left much improved.

CASE XXII.—E. M——, housewife, aged fifty-nine years; traumatic neuritis of left arm. On November 8th she fell and dislocated her left shoulder. Since the accident she has constant pain throughout the whole arm; the small and ring fingers are semiflexed. There is normal motion of the shoulder-joint. There is some atrophy of the muscles of the hand, which she cannot close.

Treatment: Spray and rubbing sparks.

November 17th. After the last treatment she could move her arm better, but has about the same amount of pain.

December 22d. She has less pain and more strength in the third finger.

January 12th. The pain has disappeared, and she can now close her hand normally.

CASE XXIII.—March 25th. K. S——, housewife, aged fifty years. She began one year ago to have in her left shoulder severe and aching pains running down to the elbow, relieved at times by liniments and rubbing. About six months ago her arm began to

grow thin (probably atrophy). Her husband rubbed the arm, and it has again grown to normal size. The arm is now always cold. Raising the arm causes pain. There is no swelling, and she has no history of rheumatism.

Treatment: Sparks.

April 11th. She can raise her arm to her head.

April 13th. The patient is very much improved.

CASE XXIV.—February 7th. S. F——, aged thirty-four years, brass polisher. Six months ago he was attacked with sciatica, which has persisted ever since; he also has pain in the back.

Treatment: Sparks.

March 4th. There has been marked improvement under treatment three times per week.

March 9th. He is very much improved since last treatment, and is completely relieved. He did not return for treatment.

CASE XXV.—E. D. J——, aged sixty-nine years, had brachial neuritis. Three months ago he was taken with severe pains in the shoulder and forearm. He has been under medical treatment ever since, without benefit.

October 17th. Treatment: Sparks and friction to the arm and over the brachial plexus three times each week.

October 19th. After the first treatment he was able to sleep all night without pain. The arm feels heavy and numb, but there is no pain.

October 22d. Last night he had return of pain, which was severe for two hours.

October 24th. Last night the arm was tender, but on the preceding night it was comfortable.

October 29th. He has been entirely free from pain for the past forty-eight hours.

November 2d. There has been no return of pain since October 27th, and the patient considers himself cured.

CASE XXVI.—G. L——, aged thirty years, watchman; bilateral sciatica. His previous health was good. He began ten months ago to have a dragging

feeling in left leg, which has grown steadily worse, until now there are frequent attacks in the opposite leg. The pain is continuous and severe. Cautery and blisters have been used without effect. His weight has been reduced from two hundred and ten to one hundred and eighty-nine pounds.

October 29th. First treatment: Sparks to back and limbs. The treatment gave complete relief.

November 5th. After the past two treatments the pain returned after two hours.

November 12th. The pain returns after the patient goes to bed and when he sits down.

November 14th. After the last treatment he was free from pain for eight hours.

November 16th. Treatment relieved the pain for ten hours.

November 19th. He has had little pain since the last treatment (seventy-two hours).

November 26th. For two days he has had but little pain, but a feeling of soreness.

November 28th. He has experienced great relief since last treatment, and is much pleased.

December 7th. He has less pain than since he was attacked, and is so well that he considers himself cured.

CASE XXVII.—December 16th. W. H——, aged forty-three years, fireman; sciatica. Fifteen days ago, on rising, he had in the right hip and thigh a severe sharp pain, which to-day shoots down to the knee. He has great difficulty in getting out of bed. There is tenderness on pressure.

Treatment: Sparks general and local.

December 20th. The patient is much relieved, and has had but little pain. Treatment gave complete relief, and the pains did not return. The cure was complete after two treatments.

CASE XXVIII.—March 2d. J. S——, aged forty-six years, tailor; sciatica. He has had occasional attacks of sciatica during the past ten years. He was taken one week ago with severe pain in the right and left leg.

Treatment: Sparks to both limbs.

March 6th. He was free from pain for five hours after the last treatment.

March 19th. He was completely relieved by the last treatment, and did not return for further treatment.

CASE XXIX.—September 22d. R. F——, laborer, aged sixty-four years; of temperate habits; sciatica. Nine years ago trouble began with occasional sharp, darting pains in the left gluteal region. After about one year the pains extended along the course of the sciatic nerve to the nerves of the leg and foot. He was compelled to have his shoes so made that no pressure came upon the instep, owing to hyperæsthesia of the surface. At no time was there any evidence of disease of the muscles or bones of the part, but the pain and suffering were at times severe. During the past four years he has had shifting pains in the right side also, and about three months ago he began to have pains of the same character in the arms and shoulders. On examination, marked atrophy of the gluteal muscles and the muscles of the thigh of the left side was found, but there was no evidence of any joint disease. There is a marked lateral curvature of the lumbar vertebræ, with shortening of the left limb. He walks with difficulty, and his countenance is anxious and drawn, evidencing a long period of suffering.

Treatment: Static sparks, local and general, three times per week. He was very much relieved by the first treatment.

September 29th. He is feeling much better, especially his arms.

October 7th. He has no pain at all, except in his left hip, which is also much better.

October 24th. He now suffers no pain whatever; except for the stiffness and spinal curvature, he would think himself well.

October 28th. He feels a little more stiffness in the limb; says there is no pain.

November 9th. He is improving steadily; the muscles are becoming stronger; and, using his own expression, he is "limbering up."

November 21st. He is feeling well. Before treat-

ment he ran up two flights of stairs, to show how well he was. He has now had no pains for several weeks. Cured.

CASE XXX.—October 21st. Mrs. B——, aged forty, housewife. She began one month ago to have pain in the right shoulder extending down the arm. The pain is at times very severe. She has pains also in the right leg.

Treatment: Sparks, local and general.

November 2d. My patient has now had six treatments, and is much improved. The pains have left the leg, and she can now raise and use the arm freely, with slight pain.

November 9th. She is much improved; will now come but once weekly for treatment.

November 16th. She has had no pain since the last treatment, and considers herself cured.

CASE XXXI.—October 3d. Mrs. J. B——, aged forty-eight years, housewife; brachial neuritis. Was taken on July 1st with pains in the right arm and shoulder, and has grown steadily worse. During the past three weeks the whole arm has been swollen and tender; the hand is also stiff. She cannot raise the arm to the level of the shoulder without causing great pain. The pain is worse at night; it is so severe that she cannot sleep.

Treatment: Static sparks, general and local. The first treatment gave great relief; she could put her hand upon her head after treatment.

October 5th. She slept almost all night after the first treatment.

October 16th. She is much improved, but suffers still at times.

October 24th. She still suffers somewhat. Same treatment.

October 28th. She has had little pain since the last treatment.

November 3d and 7th. After giving sparks, gave "electrostatic surgings" to relieve the uncomfortable sensation and stiffness of the hand.

November 9th. The patient is cured.

CASE XXXII.—October 19th. K. K——, aged forty years, single, bookfolder; has neuritis in right arm and hand. For the past three weeks she has had pain and swelling in the right hand and arm.

Treatment: Static sparks. After treatment the pain and stiffness were relieved.

October 21st. The hand is much better.

October 26th. She can raise her arm with much less pain.

November 2d. The pain is gone, but the hand is still swollen.

November 16th. She is working considerably. Her hand still swells, especially after working.

November 23d. Return to work aggravates the condition, and the patient is advised to rest from active use of the hand. The patient did not return, and it was concluded that she was cured.

CASE XXXIII.—September 16th. B. M——, aged fifty-six years, house painter. He had an attack of heat stroke in youth, after which he suffered much from headache. A few years later he had an attack of "paralysis agitans" which was relieved by treatment; twenty years ago he suffered from lead poisoning (chronic). He has not used alcohol or tobacco for twenty years. Three weeks ago, while bathing, he had an attack of severe pain, continuous in character, in the right arm and shoulder, and the right side of the chest and back. The knee jerk is normal; he has still some agitation or tremor of hands.

Treatment: Static sparks.

September 27th. He has had relief from pain for about eighteen hours after treatment.

September 30th. About the same.

October 7th. He has considerable pain in the right breast, but is feeling generally better.

November 4th. He was getting well, but discontinued treatment, and has been getting worse.

November 15th. There is less numbness in the arms.

November 20th. He can use his arms with but little pain.

November 22d. He has some pain in the right shoulder and forearm.

December 6th. He can lie on each shoulder without pain.

February 21st. The patient is steadily improving.

March 4th. He has a severe attack of pain in the right pectoral region and back; the arms continue better.

April 23d. He is very much better; has but slight pain in the right pectoral region and shoulder.

May 8th. He has some pain in the right shoulder, right pectoral region, and arm.

May 14th. He has pain in the right shoulder and head.

May 20th. He had some pain in the forearms during the night.

October 26th. He is feeling quite well. It will be observed that this patient was irregular in taking treatment, and the date of cure was protracted. It is also to be observed that he always returned when there was an exacerbation of symptoms.

CASE XXXIV.—May 24th. C. L——, female, aged sixty-one years. An attack of neuritis of the right arm began one year ago, and has pained her a great deal ever since. As treatment, sparks were given, with local and general electrization, three times each week.

June 17th. The patient is much improved, and uses her hand.

June 21st. The pain is all gone, and she can use the hand as well as ever. Cured.

CASE XXXV.—March 12th. S. W——, engineer, aged forty years. Two weeks ago he was attacked with pain and partial loss of power up and down the right arm.

March 15th. There is not much improvement in motion, but the pain is much relieved.

March 22d. He can raise his arm to the normal extent, and is very much pleased; he still has pain at the top of the shoulder on motion.

March 25th. He has slight pain at the top of the shoulder, but considers himself about cured.

CASE XXXVI.—October 31st. F. T——, aged fifty-one, housewife. Eighteen months ago she began to have a slight loss of power in the right arm and hand. At first she used to awaken from sleep, feeling the arm numb, and later on the pain increased, and she began also to have pain in the palm of the hand and tingling in the hand and arm.

Treatment: Sparks.

November 2d. She is feeling very much better, and has no numbness or tingling if she lies upon the arm at night. She has a dull "grumbling" pain along the ulnar side of the arm, usually about once each day, for a short time. The arm is very weak, as is evidenced by her lifting a light object.

November 5th. She can comb her hair without the arm going to sleep, and it seems stronger.

November 12th. She reports that she is well.

CASE XXXVII.—February 18th. J. H. R——, carpenter, aged fifty years. Four months ago he wrenched his left arm and struck his shoulder. The next morning he could not lift the arm, and has not been able to use it since. He cannot raise the arm to his head. He has a great deal of pain at night, so that he cannot sleep. There is some pain also during the day. A traumatic neuritis became established.

Treatment: Sparks, general treatment and to the arm.

February 20th. He had a good deal of relief from pain after the first treatment, and slept well at night. He can put his hand upon his head.

March 1st. The treatment last time entirely relieved the pain, but it returned the following day in the arm and shoulder.

March 3d. The treatment relieves the pain for several hours, when it returns "with all its fury."

Treatment gave relief.

March 25th. He is improving rapidly.

April 1st. Went to work to-day for the first time since he was attacked, and suffered very little pain.

April 8th. He is still at work, and considers himself well.

CASE XXXVII.—J. M——, teamster, aged forty-five years. He called for the first time on February 8th. Five weeks ago he had an accident, and dislocated the right elbow. The joint is now somewhat stiff, causing pain when moved; there are loss of power and traumatic neuritis. The arm is also swelled considerably and sensitive to pressure.

Treatment: Sparks to the entire surface three times each week.

February 20th. The pain in the upper part of the arm and at sensitive nerve points is much less; the swelling at the elbow is about the same.

March 6th. He is very much better; he can lean on the elbow, and has little pain.

March 12th. He is still improving.

March 18th. The patient is very much better, practically cured, and did not return for treatment.

The details of further cases are omitted, but are included in the following synopsis:

SYNOPSIS OF CASES OF NEURITIS.

Neuritis.	Number of Cases.	Average Duration of Treatment, Days.	Maximum Duration of Treatment, Days.	Minimum Duration of Treatment, Days.	Immediate Relief from Pain.	Known to be Cured.	Relieved of Pain and Believed to be Cured, but Cases Lost Sight of.	Treatment Exclusively Electrostatic.
Sciatic	39	32	78	4	39	32	7	39
Axillary and brachial	41	22	42	5	41	25	16	41
Total	80	57	23	80

Conclusions: (1) The pain of neuritis is temporarily relieved from the first treatment, and the case is totally relieved and cured in a minimum duration of time.

(2) The immobility and fixation of joints and limbs at once disappear unless due to prior adhesions.

(3) The more acute the case, the more urgent immediate electric treatment and the more speedy the relief and cure.

(4) An acute case is debarred from becoming a chronic case.

(5) Immobility by splints or plaster bandages is superfluous and sometimes harmful by promoting adhesions.

(6) High potential currents, of the type here referred to, produce a sedative effect upon tissue, viz., upon muscle, nerve, and any contractile tissue, produce vasomotor dilatation, and constitute the most effective curative treatment of neuritis.

